

## ABSTRACT

A test circuit and method for measuring power supply integrity is provided. The circuit may be incorporated on-chip and is small enough to be integrated many times across the surface of the die for measuring integrity parameters at several locations on the chip.

5 The circuit instantaneously measures, e.g., the rail voltage of a power supply, which may be fluctuating at the time of measurement. In addition, the circuit isolates itself from all chip power rails for the duration of the measurement, thereby eliminating any influence of external noise on the measurement. A storage capacitor is charged up to full power rail voltage for powering up a comparator. Then, the comparator is isolated from the power  
10 rails and the measurements are taken. Based upon the measurements, certain power supply integrity parameters are quantified including ground bounce and power droop.